

Notice of Allowability

Application No.

10/707,342

Examiner

Paul A. Budd

Applicant(s)

TOLT, ZHIDAN LI

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE dated 30 October 2007.
2. ☒ The allowed claim(s) is/are 40-52,55,57,64-68,71,74-81 and 84-86.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 10/30/07
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/30/2007 has been entered.

Information Disclosure Statement

2. The applicant's submitted IDS document dated 30 October 2007 and the relevance of those IDS documents to the instant application listed therein will be addressed directly below.

3. Of the submitted IDS US Patent documents, the Jin reference (6,283,812) was considered the closest to the applicant's invention but did not teach all of the limitations of the previously allowed claims **51**, **55**, and **64**. Specifically the common limitation, "exposes a single nano-structure" was not taught by Jin.

4. The Cho reference (2003/0122467), Kajiwara reference (2003/0102797), Zehnder (2003/0097976), Yamamoto (20030001490), Jeong (2003/0127960), and Nakamoto (2002/0060514) also did not anticipate the applicant's claims **51**, **55**, and **64** for at least the reason stated above. The Cho, Kajiwara, Zehnder, Yamamoto, Jeong, and Nakamoto references were considered as part of the Office Action dated 18 May 2007 for application 11/467,876 as submitted by the

applicant as part of the IDS statement dated 30 October 2007, all of which has been reviewed and found not to anticipate the applicant's claimed invention.

5. With regards to the 11/67,880 application's Office Action submitted by the applicant as part of the IDS statement dated 30 October 2007, the Majumdar (2002/0175408) reference, Smalley (7,205,069) reference, Noman (2006/0021564) reference, and the Mardilovich (6,770,353) reference did not teach all of the limitations of the applicant's claims **51, 55, and 64**.

6. In summary, none of the references submitted with the IDS anticipated the applicant's claimed invention for the reasons stated above and for the reasons stated in the "Reasons for Allowance" below. Additionally, it was not considered obvious to combine these art to reject the applicant's claimed invention. For the record: the IDS has been considered and the Allowance below is sustained and not withdrawn.

Remarks

7. Paragraphs 8-12 below are repeated from the Office Action dated 16 August 2007.

Response to Amendment

8. Claims **40-57, 64-68, 70, 71, and 74-86** are pending in the above referenced application. Claims **53, 54, 56, 70, 82 and 83** are cancelled without prejudice or surrender of subject matter. The amendments to Claims **55, 64, and**

75 in the applicant's response dated 8 August 2007 to remove minor informalities are accepted and no new matter is entered.

Drawings

9. The drawings submitted 5 December 2005 are accepted. This is a clarification of the Office action dated 8 June 2007 that failed to indicate if the drawings were accepted. The Office had intended to indicated that they were accepted. This is clarified at the request of the applicant.

EXAMINER'S AMENDMENT

10. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Please change the title of the invention from "LOW VOLTAGE
ELECTRON SOURCE WITH SELF ALIGNED GATE APERTURES,
FABRICATION METHOD THEREOF, AND LUMINOUS DISPLAY USING THE
ELECTRON SOURCE"

To

- - LOW VOLTAGE ELECTRON SOURCE WITH SELF ALIGNED GATE
APERTURES, AND LUMINOUS DISPLAY USING THE ELECTRON SOURCE -
- .

Allowable Subject Matter

11. Claims **40-52, 55, 57, 64-68, 71, 74-81** and **84-86** are allowed. The following is a statement of reasons for the indication of allowable subject matter: Claim **51** is allowable for at least the limitations that “the embedding material having a surface above which portions of the nano-structures protrude to emit electrons” and “ wherein the nano-structures comprise a nonconductive core and a conductive shell”. Claim **55** is allowable for at least the limitations that “the embedding material having a surface above which portions of the nano-structures protrude to emit electrons” and “wherein the insulator and the embedding material are composed of the same dielectric material”. Claim **64** is allowable for at least the limitations that “the embedding material having a surface above which portions of the nano-structures protrude to emit electrons” and “an anode plate including a transparent anode electrode disposed over a glass substrate and a phosphor screen disposed over the anode electrode, the anode plate being positioned opposite to said electron source with a vacuum gap disposed therebetween”. Claims **51, 55, and 64** recite “wherein each aperture *exposes a single nano-structure* and is concentrically self-aligned with the end of the nano-structure” that is important to structurally distinguish over the prior art. The prior art of record such as Lee (2005/0067935), Hsu (6,448,701), and

Nakamoto (6,097,138) were the closest art found but did not teach all of the limitations claimed by the applicant.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Budd whose telephone number is 571-272-8796. The examiner can normally be reached on Monday to Friday 8:00 to 4:30.

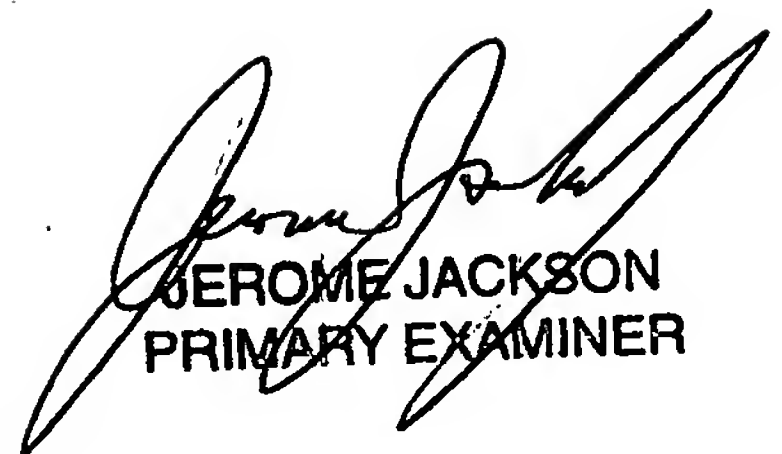
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on 571-272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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PRIMARY EXAMINER